Penulis

ANALYSIS OF EFFECTS OF MILD AND MODERATE AEROBIC EXERCISE ON THE NUMBER OF MONOCYTES AND LEVELS OF TUMOR NECROSIS FACTOR (TNF-α) ON ADOLESCENT

Abstract

Sport has an influence on the biological function both positive effect such as to improve the function of the body as well as negative effect such as inhibit or impair the body's biological functions. In certain circumstances the physical exercise can be a stressor that will stimulate muscle damage or injury which is caused by local inflammation. Local inflammation caused by exercise with appropriate intensity and duration can affect the immune system such as the number of leukocytes in which one of the components is a monocyte cell and cytokine TNF-α proinflamatory. This study was a laboratory experimental study using a randomized design of post-test control group with 33 respondents consisting of mild aerobic exercise group, moderate aerobics, and control group. It is found that there was no significant difference between the number of monocytes in the aerobic exercise of mild, moderate, and control group with p = 0389> 0.05) and the results showed there was no significant differences in the levels of TNF-α in the aerobic exercise of mild, moderate, and control groups with values p = 0.036 <0.05). The difference in the levels of TNF-α is especially in mild and moderate aerobic exercise. From this study it can be concluded that mild and moderate exercise are strongly advised to do on a regular basis because it can affect the immune system component primarily TNF-α which can act as proinflammatory cytokines.

Keywords: monocytes, TNF-α, mild aerobic exercise, moderate aerobic exercise.